metallic ſurface ſupports a much greater electrical atmoſphere than a rod of iron of 50 times the weight would do. It is ſuſpended by ſilk lines, and when charg'd will ſtrike at near two inches diſtance, a pretty hard ſtroke ſo as to make one's knuckle ach. Let a perſon ſtanding on the floor preſent the point of a needle at 12 or more inches diſtance from it, and while the needle is ſo preſented, the conductor cannot be charged, the point drawing off the fire as faſt as it is thrown on by the electrical globe. Let it be charged, and then preſent the point at the ſame diſtrnce, and it will ſuddenly be diſcharged. In the dark you may ſee a light on the point, when the experiment is made. And if the perſon holding the point ſtands upon wax, he will be electrified by receiving the fire at that diſtance. Attempt to draw off the electricity with a blunt body, as a bolt of iron round at the end and ſmooth (a ſilverſmith's iron punch, inch-thick, is what I uſe) and you muſt bring it within the diſtance of three inches before you can do it, and then it is done with a ſtroke and crack. As the paſteboard tube hangs looſe on ſilk lines, when you approach it with the punch iron, it likewiſe will move towards the punch, being attracted while it is charged; but if at the ſame inſtant a point be preſented as before, it retires again, for the point diſcharges it. Take a pair of large braſs ſcales, of two or more feet beam, the cords of the ſcales being ſilk. Suſpend the beam by a packthread from the cieling, ſo that the bottom of the ſcales may be about a foot from the

floor:

floor: The ſcales will move round in a circle by the untwiſting of the packthread. Set the iron punch on the end upon the floor, in ſuch a place as that the ſcales may paſs over it in making their circle: Then electrify one ſcale by applying the wire of a charged phial to it. As they move round, you ſee that ſcale draw nigher to the floor, and dip more when it comes over the punch; and if that be placed at a proper diſtance, the ſcale will ſnap and diſcharge its fire into it. But if a needle be ſtuck on the end of the punch, its point upwards, the ſcale, inſtead of drawing nigh to the punch and ſnapping, diſcharges its fire ſilently through the point, and riſes higher from the punch. Nay, even if the needle be placed upon the floor near the punch, its point upwards, the end of the punch, tho' ſo much higher than the needle, will not attract the ſcale and receive its fire, for the needle will get it and convey it away, before it comes nigh enough for the punch to act. And this is conſtantly obſervable in theſe experiments, that the greater quantity of electricity on the paſteboard tube, the farther it ſtrikes or diſcharges its fire, and the point likewiſe will draw it off at a ſtill greater diſtance.

Now if the fire of electricity and that of lightening be the ſame, as I have endeavour'd to ſhow at large in a former paper, this paſteboard tube and theſe ſcales may repreſent electrified clouds. If a tube of only 10 feet long will ſtrike and diſcharge its fire on the punch at two or three inches diſtance, an electrified cloud of per-

haps

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